

CLAIMS

1. A multi-unit articulated railroad car comprising an un-even number of rail car units connected in end-to-end fashion by articulated connectors mounted above railroad trucks, the railroad car having a transverse centreline, and the articulated connectors being mounted to the railcar units in a symmetrical arrangement relative to said transverse centreline.
2. The multi-unit articulated railroad car of claim 1 wherein:
one of said rail car units is a middle rail car unit;
each said articulated connector has a male portion and a female portion; and
said middle rail car unit has two said male portions mounted thereto.
3. The multi-unit articulated railroad car of claim 1 wherein:
one of said rail car units is a middle rail car unit;
each of said articulated connector has a male part and a female portion; and
said middle rail car unit has two of said female parties mounted thereto.
4. The multi-unit articulated railroad car of claim 1 wherein said railroad car has side bearing arms, and said side bearing arms are mounted in a symmetrical arrangement relative to said transverse centreline.
5. The multi-unit articulated railroad car of claim 1 wherein:
one of said railcar units is a middle rail car unit carried between first and second areas of said rail car trucks, and
said middle rail car unit has side bearing arms mounted thereto, said side bearing arms engaging bearing surfaces supported on said first and second trucks, said side bearing arms being arranged symmetrically relative to said transverse centerline.
6. The multi-unit articulated railroad car of claim 1 wherein at least one of said rail car units has a well defined therein for accommodating intermodal cargo.

7. A multi-unit articulated intermodal railroad car comprising:
 - first, second and third rail car units carried on a plurality of rail car trucks;
 - the first rail car unit being joined to the second rail car unit at a first articulated connection mounted to a first of said trucks and the second rail car unit being joined to the third rail car unit at a second articulated connection mounted to a second of said trucks;
 - each articulated connection having a male articulated connector portion associated with the end of one rail car unit and a mating female articulated connector portion associated with the end of an adjacent rail car unit;
 - the second rail car unit having a first end adjacent the first rail car unit and a second end adjacent the third rail car unit, the first and second ends each having one of the male and female articulated connector portions mounted thereto, the articulated connector portion mounted to the first end of the second rail car unit being identical to the articulated connector portion mounted to the second end thereof;
 - the first and third rail car units each having an end adjacent the second rail car unit, the first and third rail car unit ends each having the other of the male and female articulated connector portions mounted thereto for mating with the articulated connector portions of the first and second ends of the second rail car unit, the articulated connector portion mounted to the first rail car unit end being identical to the articulated connector portion mounted to the third rail car unit end.
8. The multi-unit articulated intermodal railroad car of claim 7 wherein:
 - the articulated connector portion mounted to each end of the second rail car unit is a female articulated connector portion; and
 - the articulated connector portions mounted to the first and third rail car unit ends are male articulated connector portions.
9. The multi-unit articulated intermodal railroad car of claim 7 wherein:
 - the articulated connector portion mounted to each end of the second rail car unit is a male articulated connector portion; and
 - the articulated connector portion mounted to the first and third rail car unit ends are female articulated connector portions.

10. The multi-unit articulated intermodal railroad car of claim 8 wherein:
the second rail car unit includes a first pair of side bearing arms mounted to the first end thereof and a second pair of side bearing arms mounted to the second end thereof, the side bearing arms of the first pair being identical to the side bearing arms of the second pair;
the first rail car unit end has a third pair of side-bearing arms mounted thereto for locating opposite the first pair of side-bearing arms; and
the third rail car unit end has a fourth pair of side-bearing arms mounted thereto for locating opposite the second pair of side-bearing arms; the side-bearing arms of the fourth pair being identical to the side-bearing arms of the third pair.
11. The multi-unit articulated intermodal railroad car of claim 10 wherein:
each side-bearing arm has a proximal end connected to a respective end of a rail car unit and a distal end;
the side-bearing arms of the first pair are spaced away from each other a first distance measured center-to-center at the proximal ends thereof;
the side-bearing arms of the second pair are spaced away from each other a second distance measured center-to-center at the proximal ends thereof, the second distance being equal to the first distance;
the side-bearing arms of the third pair are spaced away from each other a third distance measured center-to-center at the proximal ends thereof; and
the side-bearing arms of the fourth pair are spaced away from each other a fourth distance measured center-to-center at the proximal ends thereof; the fourth distance being equal to the third distance.
12. The multi-unit articulated intermodal railroad car of claim 11 wherein the third distance is greater than the first distance.
13. The multi-unit articulated intermodal railroad car of claim 12 wherein:
the first pair of side-bearing arms is nested within the third pair of side-bearing arms;
and
the second pair of side-bearing arms is nested within the fourth pair of side-bearing arms.

14. The multi-unit articulated intermodal railroad car of claim 12 wherein:
the first pair of side-bearing arms lies laterally inboard of the third pair of side-bearing arms; and
the second pair of side-bearing arms lies laterally inboard of the fourth pair of side-bearing arms.
15. The multi-unit articulated intermodal railroad car of claim 14 wherein:
the side-bearing arms of the first pair extend away from the first end of the second rail car unit in a mutually diverging manner; and
the side-bearing arms of the third pair extend away from the third rail car unit end in a mutually diverging manner.
16. The multi-unit articulated intermodal railroad car of claim 12 wherein:
the first pair of side-bearing arms lies between the third pair of side-bearing arms; and
the second pair of side-bearing arms lies between the fourth pair of side-bearing arms.
17. The multi-unit articulated intermodal railroad car of claim 16 wherein the third distance is less than or equal to about 70 inches; and the first distance is at least about 42 inches.
18. The multi-unit articulated intermodal railroad car of claim 17 wherein the third distance is 60 inches and the first distance is 42 inches.
19. The multi-unit articulated intermodal railroad car of claim 17 wherein the third distance is 52 inches and the first distance is 48 inches.
20. The multi-unit articulated intermodal railroad car of claim 16 wherein:
the side-bearing arms of the first pair extend substantially perpendicular to the first end of the second rail car unit; and
the side-bearing arms of the third pair extend away from the third rail car unit end in a mutually diverging manner.

21. The multi-unit articulated intermodal railroad car of claim 12 wherein the first distance is greater than the third distance.
22. The multi-unit articulated intermodal railroad car of claim 21 wherein:
the third pair of side-bearing arms is nested within the first pair of side-bearing arms;
and
the fourth pair of side-bearing arms is nested within the second pair of side-bearing arms.
23. The multi-unit articulated intermodal railroad car of claim 21 wherein:
the third pair of side-bearing arms lies laterally inboard of the first pair of side-bearing arms; and
the fourth pair of side-bearing arms lies laterally inboard of the second pair of side-bearing arms.
24. The multi-unit articulated intermodal railroad car of claim 23 wherein:
the side-bearing arms of the first pair extend away from the first end of the second rail car unit in a mutually diverging manner; and
the side-bearing arms of the third pair extend away from the third rail car unit end in a mutually diverging manner.
25. The multi-unit articulated intermodal railroad car of claim 21 wherein:
the third pair of side-bearing arms lies between the first pair of side-bearing arms; and
the fourth pair of side-bearing arms lies between the second pair of side-bearing arms.
26. The multi-unit articulated intermodal railroad car of claim 25 wherein the first distance is less than or equal to about 70 inches; and the third distance is at least 42 inches.
27. The multi-unit articulated railroad car of claim 26 wherein the first distance is 60 inches and the third distance is 42 inches.
28. The multi-unit articulated intermodal railroad car of claim 26 wherein the first distance is 52 inches and the third distance is 48 inches.

29. The multi-unit articulated intermodal railroad car of claim 25 wherein:
the side-bearing arms of the third pair extend substantially perpendicular to the third rail car unit end; and
the side-bearing arms of the first pair extend away from the first end of the second rail car unit in a mutually diverging manner.
30. The multi-unit articulated intermodal railroad car of claim 11 wherein the first distance is equal to the third distance.
31. The multi-unit articulated intermodal railroad car of claim 30 wherein:
the side-bearing arms of the first pair extend substantially perpendicular to the first end of the second rail car unit;
the side-bearing arms of the second pair extend substantially perpendicular to the second end of the second rail car unit;
the side-bearing arms of the third pair extend substantially perpendicular to the third rail car unit end;
the side-bearing arms of the fourth pair extend substantially perpendicular to the fourth rail car unit end.
32. The multi-unit articulated intermodal railroad car of claim 31 wherein:
the distal ends of the side-bearing arms of the first pair are aligned with the distal ends of the third pair of side-bearing arms; and
the distal ends of the side-bearing arms of the second pair are aligned with the distal ends of the fourth pair of side-bearing arms.
33. The multi-unit articulated intermodal railroad car of claim 31 wherein the first distance is in the range of about 50 inches to about 70 inches.
34. The multi-unit articulated intermodal railroad car of claim 33 wherein the first distance is 50 inches.
35. The multi-unit articulated intermodal railroad car of claim 33 wherein the first distance is 70 inches.

36. The multi-unit articulated intermodal railroad car of claim 32 wherein:
the side-bearing arms of the first and third pairs are mutually engaging;
the side-bearing arms of the first pair has an upwardly facing bearing surface; and
the side-bearing arms of the third pair has a downwardly facing bearing surface.
37. The multi-unit articulated intermodal railroad car of claim 32 wherein:
the side-bearing arms of the first and third pairs are mutually engaging;
the side-bearing arms of the first pair has a downwardly facing bearing surface; and
the side-bearing arms of the third pair has an upwardly facing bearing surface.
38. The multi-unit articulated intermodal railroad car of claim 10 wherein each articulated connection is carried at a first height above TOR; and the side-bearing arms of each pair are carried at a second height above TOR.
39. The multi-unit articulated intermodal railroad car of claim 38 wherein the second height is greater than the first height.
40. The multi-unit articulated intermodal railroad car of claim 39 wherein the second height is 37 inches above TOR.
41. The multi-unit articulated intermodal railroad car of claim 39 wherein the second height is 44 inches above TOR.
42. The multi-unit articulated intermodal railroad car of claim 38 wherein the second height is substantially equal to the first height.
43. A multi-unit articulated intermodal railroad car comprising:
first, second, third, fourth and fifth rail car units carried on a plurality of rail car trucks;
the first rail car unit being joined to the second rail car unit at a first articulated connection, the second rail car unit being joined to the third rail car unit at a second articulated connection, the third rail car unit being joined to the fourth

rail car unit at a third articulated connection, the fourth rail car unit being joined to the fifth rail car unit at a fourth articulated connection; each articulated connection having a male articulated connector portion associated with the end of a rail car unit and a mating female articulated connector portion associated with the end of an adjacent rail car unit; the first rail car unit having an end adjacent the second rail car unit, the first rail car unit end having one of the male and female articulated connector portions mounted thereto; the fifth rail car unit having an end adjacent the fourth rail car unit, the fifth rail car unit end having one of the male and female articulated connector portions mounted thereto; the articulated connector portion of the fifth rail car unit end being identical to the articulated connector portion of the first rail car unit end; the third rail car unit having a first end adjacent the second rail car unit and a second end adjacent the fourth rail car unit, the first and second ends each having one of the male and female articulated connector portions mounted thereto, the articulated connector portion mounted to the first end of the third rail car unit being identical to the articulated connector portion mounted to the second end thereof.

44. The multi-unit articulated intermodal railroad car of claim 43 wherein the articulated connector portion mounted to each end of the third rail car unit is a female articulated connector portion.
45. The multi-unit articulated intermodal railroad car of claim 44 wherein the articulated connector portions mounted to the first and fifth rail car unit ends are male articulated connector portions.
46. The multi-unit articulated intermodal railroad car of claim 44 wherein the articulated connector portions mounted to the first and fifth rail car unit ends are female articulated connector portions.
47. The multi-unit articulated intermodal railroad car of claim 43 wherein the articulated connector portion mounted to each end of the third rail car unit is a male articulated connector portion.

48. The multi-unit articulated intermodal railroad car of claim 47 wherein the articulated connector portions mounted to the first and fifth rail car unit ends are female articulated connector portions.

49. The multi-unit articulated intermodal railroad car of claim 47 wherein the articulated connector portions mounted to the first and fifth rail car unit ends are male articulated connector portions.